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## Letterson

Continued from page 41

mine is "back proof"  
 just my thought,  
 That because

Megan Melville replies: Don't turn to page 44. We have another tale of the cat-as-fallen-from-sky dream. This time, however, the dainty pussycat don't make the heady claim that this Ake server was "back good"—they call it "overclocking."

## Departmental error

I was just reading the July 1993 issue of the *Computer Planet* when I came across the article "CD ROMs are Narrower Crested's Lined Geese" by Iona Campbell. Under the sub-heading of "Canadian culture" the article states, "The Department of Canadian Heritage and is the Department of Communications".

The statement is not entirely true. While some of the responsibilities of the Department of Communications were taken over by the Department of Canadian Heritage, most were transferred to Industry Canada. Other responsibilities involving cultural heritage were never within the Department of Communications.

To say that the "Department of Canadian Heritage used to be the Department of Communications" would be like saying Ford used to be Newell just because Ford took over Newell's job from Newell.

Bill replies: Thanks for the clarification. The comment you quote was actually made by the licensee subject. Other blackboard. ■



## Street Buzz

2008年10月 第10期

Fears of disaster still loom for businesses whose computer systems are expected to freeze at midnight on Dec. 31, 1999. For some specialized consulting firms, fixing potential corporate computer catastrophes is a profitable endeavor. Burnaby-based Group West Systems Ltd. is one such firm that has newly specialized in connecting old phone systems from initially interrupting the two-day year transition of "y2k" to the new year.

Group West Inc. has exclusively licensed to market a software product called Info 2000 to businesses in provinces throughout Canada, and into Washington and Oregon states. They also have distribution agreements with IBM, Microsoft, and Computer Associates. So far this year, revenues from sale of the software and related Year 2000 services have reached nearly \$500,000.

includes Rogan Sugar and Clearly Canadian Beverage Co. Earlier this year, Group West was named one of Canada's top 50 professional service companies by The Financial Post. Since a public offering, raising the

## Year 2000 Fears Turning to Gold

company's stock has recently jumped from roughly \$4.10 a share to more than \$6.

**B.C. injects \$4 million into high-tech research and development**

in a market environment to become a life line in North Columbia's software development, the provincial government announced plans to invest \$5.4 million in the last half. Technology research and development projects over the year. The Science Council of BC will administer the program, which takes a quarterly competition and a panel of voluntary experts to determine which companies and projects qualify. According to Dan Miller, the minister responsible for the Information, Science, and Technology Agency, he expects direct investment, the province needs a minimum of \$1.6 in economic benefit. The deadline for the next quarterly competition is November 1994.

TEL 604-438-7732

Measure up well through life.

Minneapolis-based Measure Software has entered into an arrangement with Healy to

an effort to sell and distribute its software through one of the biggest Web malls on the Internet. Santa Clara, Calif.-based iMater has established itself as one of the leading anti-virus software companies in the high-tech industry. Its new products—especially its anti-virus code—are sold and distributed through its own Web site, which features state-of-the-art content on how to

Kinkadee will sell its well-known Computer software through the IBM. Compaq enables users to secure their computer hardware by installing early that automatically notifies local law enforcement of the incident when connected to a phone line even if caller identification is blocked by the number. It calls from an unlisted Mobile and Kinkadee are also in partnership with KMAC, Kensington Technology and local law enforcement to further development of the software.

Web site: Kinkadee <http://www.kinkadee.com>  
@kinkadee, <http://www.kinkadee.com>

### Declines seen in bird numbers

Global Data Systems Inc. of Worcester announced plans last month to raise more than \$2 million through a private share offering in a move to raise the necessary funds to purchase Netrek-based i-Mark Systems, Inc. for \$24 million. Purchase of the American competitor includes all assets,

*Continued on page 10*

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# Celebrity Net Addicts

### Life styles of the Wired and Famous

BY JOYCE SINGER

**P**eople are not new to the Net anymore and vice versa. By now, most of us have found our niche, and we're pretty well hooked. Read on, as these stars reveal their own internet addictions.

Actor David Hewlett, who plays computer-aided Grand Jockey on the TV drama *Spooks*, was so drawn to the bar that he developed his own Web site during rehearsals.

"The age absolute and utter need when it comes to the Internet. To me, it's the concept of it all lies in so well with any old dreams you've got, if you want to go really geeky. It's like a collective consciousness. I'm hooked on the Web, because it's an information hub."

All the Tunesia Trek II poster board convention, both TV actors Robert Gammie McNeill from Paris on the Star Trek. Inspired and Claudia Christian Schomberg Special Awards are displayed at the 20th Annual Convention with Sam, in Italy Italy.

### Defeating the Habit

Michael admits that at one point he was in danger of succumbing to the allure of the Web. Like many of us, he's discovered the addiction of surfing 'til the wee hours. So he simply decided to curb it before it became a full-blown addiction.

"The best I wanted surfing is better spent reading, playing with my children, and studying sports," he says.

Claudia Christian says she's not very hot damn, yet she's very involved with her fans online. "I've done live chats with John Cleveland and Joe Satriani [Sty's guitarists and executive producers], Megan Kelly [Dixie], where I tried to get into the chicken. They kept taking me off. They'd given me a code word to prove who I was. Of course I lost it, and Joe had to convince them."

"On the Web, if you punch in my name...well, I have a lot of Web sites, especially Glenn Feldman's. There's an excellent photo on his Web page, from my father's 1970s shows, where something was damaged."

And the worst part is, that I sent it to her. I said to the wrong one—the right one—with the apple showing, that's you very much?

At the Canadian Bookstore Association convention and trade show, we caught up with various retailers bopping their books.

Shouting champions Eric Sapiro (Green) and Gail Smith on his Apple computer when he can find the time. "I've been so busy that, leg, I haven't been home much. And I'm only halfway toward seven, right now. But I enjoy looking up a lot of stuff on cars and sports."

What does he miss the most? "Surfing. There's always something new and interesting that comes out." What does he miss from his pre-Internet days? "Oh, I guess, relaxation. But I can still relax when I'm in front of the computer, and still surf."

Best-selling novelist and publisher Charlotte Vale Allen (*Mixed Blood*) has less time these days for computer-related things going online at Christmas.

"I mastered the Internet in about a day and a half. I don't know why I was so phobic about it—it was so easy! I've even tracked people down on it [the on-line mailing list that deals with pedophilia, people who've been libelously accused—and that generates a lot of e-mail].

"My friends and I are in touch 5,000 times more than we ever were before. I find it's the equivalent of an answering machine: if you log on and there are no messages you think, 'Nobody likes me!'"

Gregory B. Long

Geoff Hayes, TV personality and co-author of *Monde Canuck*, an anthology of Canadian pop culture, is added to the lineup.

"My mind is a buffet-lined organ. I'll go into the Net specifically looking for something—and get off an hour and a half later, realizing that I never got them. I mean, no Internet."

\*Although there's a high rate of illegal downloading on the Internet, I think that it

managed to transcend television, regarding the amount of violence that's on it."

Amazingly, he was honored the next year with traditional geological research about his family mine, until he started the strike, and discussed several other Peabody milestones.

Ontario Premier Bob Rae (Vice Premier in Absent) benefits from e-mail, using it to communicate with people, particularly Ministers.

"It's replaced, in good measure, the phone, and in good measure, leaves I find with a lot of people. It's easier to connect one by email, rather than write them. Obviously, I use the Internet for any kind of information I can get a hold of. For me, it's the going into the stacks in the library. I give you unlimited access. But I find I get lost when surfing the Web. I'm not a great surfer."

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## Ziggy online

The enigmatic and popular host of several TV programs at major Canadian stations—Bravo and CityTV—Eggy Laurent is also an author (*Life On Venus Ave* and *Ultimate Caribou*) and a *Wash. Post* columnist.

Eggy also worked closely with Charlotte Vale Allen, whose new company, Island Nation Press, is publishing her first book.

"Actually I'm very much connected to a computer land. With my PC at home and my PC at work, I'm co-

Finally connecting with my husband and especially Charlotte, who lives in Connecticut, via email. No romance, no hand and anymore? I'd tell myself. I tried to write a letter. Forget it! We hooked on email. We write each other letters back and forth and it's unbelievably fun."

Grey has used Net surfing, and after a while I got bored. I think it's a wonderful marketing tool. Jealous other people's sites and to do things with them. For me, it's **fun**. I also love the gossip on the site. DayTV's site is really good for I just have you read the chat group. I really like some news, you know. —**Jesse Singer**



# Deciphering Computer Ads



BY ALAN ZISMAN

**S**o you're thinking of buying a new computer maybe your first or maybe buying up from an older model. You've picked up a copy of this publication (and more) while thinking through the ads, and you got the most you seek, the more you want. If you want to fit in a wallet, and if you want to fit in a wallet, why are there so many specs? It's better than buying a car.

Not evaluated is perfectly justified. There are lots of options and many of them are referred to in mysterious scenarios. Maybe you thought you knew what RAM meant, but what's EDO RAM? SDRAM? What's better? Should you care?

Let's try to unravel some of the secrets, and help you to read the ads.

To start off, let's try to narrow your choice to, so you can decide the ads to which you should pay attention.

## The Classic Questions

### 1. PC or Mac?

This debate has been going since 1981, and it's not going to stop in a hurry. There are lots of good reasons to choose either computer platform.

My advice: If you have a background using one platform as the other, it's probably best to stick with it, unless you have a good reason to switch. Otherwise, go with what most of your "non-computer community"—the computer users you know at home, school, or work—are using.

Mac's are the reigning platform in K-12 education and graphics systems, but PCs have about 90 percent of the overall market. As a result, about 90 percent of the ads in this publication are for PC platform machines.

### 2. Name brand or clone?

If you feel more comfortable with a nationally advertised name brand, you'll pay a premium and get fewer choices. Compaq, both PCs and Macs, can be a good choice, both now. More and more, personal computers have become commodity items, selling standard parts. As a result, a no-name clone, assembled with quality parts, can be as reliable as a brand-name clone advertised on TV.

### 3. What's your budget?

Only you know the answer to this one! You

can get a new, low-end computer for around \$500, or spend \$3,000 or more. Most sure you budget some money for such things as a printer and software.

### 4. What are you planning to do?

And a bit of word processing? Connecting to the internet? Video production? Playing the latest games?

Ironically, game playing is one of the most demanding things you can do with your computer. New games typically need more powerful hardware. But if you're not interested in typical business uses, or even Web surfing, you can get quite happy with a machine further down the cutting-edge.

## Piecing it Together

### 1. The central processing unit (CPU)

The CPU is the brain of the computer. Typically, it is rated by so-called clock speed, measured in millions of cycles per second, or megahertz (MHz). The original IBM PC ran at 4.77 MHz, while speeds of 33 MHz or more are common today.

If you're getting a Mac or a Mac-clone, all new models are based on the PowerPC chip. A few PC models do get the faster yet a little faster CPU. PC buyers have more complications, however.

Most PCs sport CPUs from Intel, with a choice (in some of power) between Pentium, MMX Pentium (enhanced for multimedia), Pentium Pro (strictly in office terms), and the newest, (also MMX enhanced) Pentium II. The MMX enhancement is strictly aimed at gamers, and even then, seldom making use of it is truly doing anything. As a result, standard Pentium can be good performers for business users—and prices for them are dropping dramatically.

If the computer ad doesn't mention a specific Intel model, or if it says "Pentium II," "MMX," or "Pentium Pro," it's using a CPU from one of Intel's competitors, AMD or Cyrix. Both competitors make good products that can be bought without fear of compatibility. Their overall models even include the equivalent of Intel's MMX enhancement.

It is sometimes hard to compare CPUs from different companies, however. Cyrix, for

example, claims to deliver 133 MHz in comparison with 133 MHz CPUs from AMD and Intel, even though it actually runs at only 100 MHz.

Pretty much any CPU sold today will do a good job of running standard business and internet software. These users should put more money into memory, hard disk, or superior graphics. Heavy-duty game players should get the fastest processor they can afford.

### 2. RAM

Your computer needs memory (RAM) in order to hold instructions, data, and the results of its operations. Without enough RAM, the computer will need to be constantly reading and writing to the drives, thus slowing itself down. Luckily, RAM is relatively cheap these days.

RAM is measured in megabytes (MB) or meg. Systems are typically being advertised with as little as 16 MB. If you can afford it, I suggest that 32 MB—your computer will run more smoothly and within a year or two, you'll be running software that will demand that much memory.

Any system with a CPU running faster than about 50 MHz will work best with more efficient SDRAM. Slower systems will work best with the slightly cheaper EDO chips.

In ads, companies typically leave out the clock speeds: 3-33 cache RAM, extensive, super-fast memory chips to take part of the test off the main RAM. You want at least 333 MHz/60 MHz of DR.

### 3. Hard drives

Programs and data are stored on hard drive. The capacity of these devices has grown dramatically in recent years, such that size is no longer measured in megabytes but in gigabytes (GB) or giga—billions of bytes of information.

Advanced systems offer at least a GB drive, but you may want a single one or perhaps two, up to 100 MB. You may want to check the cost of upgrading to a 3.4 GB or larger unit.

If you're getting a copy of Windows 95 with your system, make sure you get the latest Windows 95 version, and ask the vendor to provide it with the floppy (for file allocation) system. Otherwise, vast amounts of your drive will be wasted by the inefficient way which windows store data.

### 4. CD-ROM drives and sound cards

A CD-ROM drive is no longer a fluff. Even if you're not interested in games or multimedia, the CD-ROM format is actually the only way you can buy today's audio programs. You'll get systems advertised with 8x, 16x, 24x, 32x, or 40x CD-ROM drives—the number compares the drive's speed to the speed of the original CD-audio drive in your home stereo. While faster is better, after about 16x, the difference is often hard to feel. But if you have a lot of a position to get a reasonably better drive.

If you don't want to play games or access CD-ROM software at education schools, you may have less need for a sound card or speakers, but they're included in most systems. Basic systems offer discs of this size.

And Sound Blaster card, along with lower-end speakers. No matter what you want to be able to hear for a so-called CD (original equipment manufacturer Sound Blaster) card, same players should budget for a real Sound Blaster (and) and better speakers, maybe including a subwoofer to really shake the house down.

### 5. Video cards and monitors

Basic systems usually come with a no-name brand VGA video adapter, often to Cinescape, and a 14" or 15" video RAM. These are perfectly adequate for typical business software, Web browsing and other text and graphics work. Apple, the gamers will want more, a high-end video card, such as Matrox's new CardMaker 2/3, or Matrox's making more video RAM and 3D acceleration.

Basic monitors are to be pretty bad, like the speakers in many low-end stereo systems, but they're known. These days, the monitor included with the system will be a 14" or 15" monitor, a 14" or 15" monitor that will be perfectly adequate for most users.

Look at a few alternatives, however, and decide whether the extra quality of size is worth the extra cost for you—and don't assume that a brighter picture is automatically better. If you're going to be using the system for many hours a day, you'll want something that's brighter with a clip monitor. And if you're going to be keeping multiple windows open on your screen, or working on graphics and page design, paying extra for a larger monitor may be worthwhile.

### 6. Mouse and keyboard

Similarly, the choice of mouse and keyboard is personal. You're going to be using these all the time, so make sure they're comfortable. Low-end models bundled with most systems may be about \$10 or \$15, but more expensive (and more expensive) can be up to \$30 each. If they're more useful to your hands, though it may be a worthwhile investment, just as buying comfortable but expensive shoes is a better choice than getting a cheaper pair that pinch your toes.

But most expensive isn't necessarily better. The top Microsoft Mouse and Keyboard, for example, may be preferred for users with small hands (and just because something is labeled "ergonomic" doesn't automatically make it safer or more comfortable).

### 7. Bundled software

A computer without software is an expensive paperweight. Check what's included in any advertised deal, is the operating system (or best included)? If it's new (or in an extra box) as for Windows 95 or Mac OS 8, it may not be as good a deal as it looks. Also, check for a system that includes a bunch of games or applications you don't want.

Hopefully, these tips will help you understand some of the options mentioned in the ads. Carry your needs, pay attention to the top point, and happy shopping!



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## Handling Windows '95 glitches

by Lynn Gamau

Windows 95, like any operating system, has its "moments of interest" when you'd like to run something from the menu, having times will seem like it's not quite behaving what we are doing just now. We're a little short of sleep, but a surprising number of problems are quite easy to fix, if you know how.

Windows 95 applications don't use the file manager Windows 3.11 desktop icon. They place entries into a special database called the Registry—what, if corrupted, will wreak havoc havoc on your entire system, on a smart bit of preventive maintenance is to make a backup of the file by choosing Run on the Start menu, and typing in "regedit" (no quotes).

When the Registry Editor opens, again in the menu and choose Export Registry File. Pick a name and location for the file and click Save, and you're done.

Alternatively, use the special registry backup program from your Windows 95 CD-ROM. Copy CHSRK02.DLL from the CD-ROM's \Tools\Win95\Clipboard folder and put it into the Windows directory, and copy CHSRK02.DLL into the Windows\help folder. Then run the program by double-clicking CHSRK02.DLL, and follow the detailed instructions.

The right menu of any Windows icon is an "adaptable" system, and the best defense is a startup disk. Using Windows 95, open the System Run under the Computer then choosing the Startup Disk to boot a clean floppy in drive A, and click Make Disk, then follow the prompts. Lower right menu suggest what a pro-

### Street Buzz

Continued from page 8

a proprietary technology, and sending them contracts. I think most business moves deal with a lot of such across products and smart card technology. The remainder of the funds raised will cover increased inventory costs.

Web site: <http://www.globevision.com>

### Forbidden piece the Web

In a move to promote a female presence on the impact of women in technology, the BC Women's Society now has its own e-zine. Last month, the online bulletin board Women Magazine, which features a regular profile of female who work in the industry. The 8th issue is expected sometime this month.

Web site: <http://www.bcwomens.com>

Stop! Here is the Computer Play/Canada Computer website, <http://www.computerplay.com>, is a website, Canada's first online site, which is dedicated to the computer industry.

from crashes. Whether you get a message about the program having performed an illegal operation, or the dreaded blue screen, accept the fact that your system will now be unstable and restart Windows by going to the Start menu, choosing Shutdown, then Restart the Computer.

If Windows 95 is really stuck, and you

have to push the reset button, the first thing you should do when the system last message is to run ScanDisk. Like its DOS 6.22 cousin, it will clean up any lost clusters that the crash may have created and remove hidden bad files. Next, find the program by clicking Start, then choosing Programs, then Accessories, then System Tools, then

ScanDisk. Select the drive(s) to check, then click Start.

Finally, as with virus programs, properly updated, can be worth its weight in gold if you push the fix, or remove files or folders from outside security regularly.

As they lay on the X-Files, trust me one \*

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# Where to Repair?

In the August issue we asked computer repair shops and businesses to provide us with some details of the services they provide. Here are the results.

**Microsoft Innovation + 2000, New York, New York**  
 300 W. 12th, New York, New York 10011  
 Repair services specialties: Hardware  
 Authorized to service certain brands: HP  
 Warranty on work: No  
 Hours info: No. Pick up/delivery: No

**Hourly fee: \$25, 10 minutes minimum**  
**PC: Unlimited Service + 1144, New York, New York**  
 441-4444, New York, New York 10011  
 Age of business: 1 year  
 Repair services specialties: Software, hardware, computer graphics, network and CD  
 Authorized to service certain brands: HP  
 Warranty on work: 1 year parts and labor  
 Hours info: No. Pick up/delivery: No  
 Hours info: 9AM to 6PM, 1PM to 5PM  
**CSI Service Center + 717-2807, Reading, PA**  
 295-8474, Reading, PA 19601  
 Email: csiservicecenter@aol.com

**Age of business: Over 6 years**  
**Repair services specialties: Printers, monitors, faxes and computers parts and supplies**  
 Authorized to service certain brands: Brother  
**Computer Multi-Computer**  
 Warranty on work: 30 days labor parts as per manufacturer  
**Hours info: No**  
 Pick up/delivery: No (24 hours not req)  
 Hours info: 10AM to 6PM, 1PM to 5PM  
**CSI Consulting + 404-3041, New York, New York**  
 Email: csiconsulting@aol.com

**Age of business: 10 years**  
**Repair services specialties: Hardware, software, business systems**  
 Authorized to service certain brands: No  
 Hours info: 9AM to 5PM, 1PM to 5PM  
 Email: 404-3041, New York, New York  
**Walter Service Systems + 1-800-345-6666**  
 Email: walter@walter.com  
 Age of business: 1 year  
 Repair services specialties: Hardware, software, network, only sales, HP, IBM, CD drive  
 Authorized to service certain brands: No  
 Hours info: No. Pick up/delivery: No  
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## Troubleshooting for Beginners



BY DAVID ROSEN

Is your computer a delicate piece of machinery or is it too tough to break? The answer lies somewhere in the middle.

On the positive side, there are very few things you can do that will really destroy your computer. On the negative side, there are hundreds of minor things that can—and frequently do—go wrong with a computer.

The good news is that most are fixable (and preventable) by you.

Technical support takes cost at the typical problems and immediately whenever available, as they go. Check all plugs and cables to make sure they're firmly in place; adjust the monitor control and brightness; insert the diskette properly. Following the same steps in the case in the upper left.

hard copy), unless the dealer. If you want to copy onto 3.5, make sure the diskette is formatted for your computer.

### The golden rule of computing!

If all else fails, try restarting your computer.

Then there are the less obvious problems that require prevention. Don't leave your diskette near anything that produces a magnetic or electrical field, because these fields will scramble any magnetically stored information. If you put a diskette near a drying telephone, on top of your computer

monitor (or TV for that matter), or near audio speakers or even your air-conditioner, you can either expect several hours of reprogramming, or lose all data and other bad events.

Cleanliness is also important for computers. Don't work properly if it's jammed up with stuff that has fallen into it. Prevention is the best order—don't eat near your computer or let your cat sleep on top.

*Continued on page 27*

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# Sounding Off



## Rating Today's Multimedia Speakers

by MARC SALTEMAN

Probably the single most neglected addition to any home computer is a good set of speakers. Whether you're a diehard gaming enthusiast or simply want to hear the music in your head while doing work on your beloved PC, there are many options for bettering your audio experience.

While a different minority of users have opted to connect their computers to their stereos, most users are still stuck to those tiny, tinny-sounding, non-amplified speakers that accompanied your desktop, put down, beelines games and other multimedia software (such as entertainment products, music creation programs, and interactive reference tools). The Web has also become a fantastic medium for music, littered with MP3Audio, RealAudio, RealPlayer, Shockwave Audio, MP3, and other plug-ins and sound players.

Audio is also one of those understated things when it comes to your overall multimedia experience, and it is a classic example of "you can't notice them but your equipment is using you for something really better."

*It once read that the rule of thumb for any*

stereo computer users is to spend roughly 10 percent of the value of their PC on the sound system. After reviewing our tests that varied as much in price as in performance, I feel this is a fairly accurate guess of value. Of course, this depends on what you use your computer for, how often, and what kind of a sound card you have. In other words, there is no point investing in a \$200 set of speakers for your PC if you only have an 8-bit sound card used in your system.

Before we get into the various types of speakers on the list, let's quickly go over how each one was measured.

### How I Tested the Speakers

Keep in mind that sound clarity, positioning, and range levels are very subjective to my definition. I have spent well over 10 years in recording studios behind engineering consoles as a production assistant, plus I've been listening computer games for three years, often trying that good music one found are overlooked by the game developers. As a backup, I had a second and third pair of ears on hand for extra opinions, and last of all, my system consists to ensure the most accurate listening.

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As sets were used on a Pentium 200 MMX running Windows 95 with 32 MB RAM, a 2x4 Paracard, CD-ROM drive and an AXT 32 Creative Labs sound card with the latest drivers.

In addition, you still have to empty the appropriate bins in order to derive the right conclusions, so to test each set I spent three CD-ROM games with freestyle video and audio WFO, and three music CDs. For games, I used Savage of Amazon (the first Quake add-on pack with a later soundtrack by James Newell), Archangel's Tempest's Odyssey (a lot more and sound effects by Philippe Viallet), and Tarnier's world (the final, 2002 Night).

Music CDs obviously were chosen by genre as these including 1000 made the CD. Variety of Sound Concepts (licensed and mastered in 1990 by Tony Darnall), the Counting Crows' Desembling the Bandits for its nice balance of acoustic and electric strings, and Peter Dinklage (the Desembling Sound for its heavy industrial sound).

All speakers tested were magnetically shielded to prevent magnetic interference, and were all well shielded, since most sound cards are only capable of pumping out a milli of power.

Now that you know how and why we've tested these products, let's jump right in and take a look at the shortcomings for each of the six sets used. Take note that not all speakers have the same settings, video features, or, of course, price. And if you are a

retailer or audiophile, you'll appreciate that in less things are standard as possible, therefore including audio, including video, such as impedance, total harmonic distortion, input sensitivity, and line type.

For clarity, I have also opted to discuss settings instead of frequency response (although this can be misleading too, since some manufacturers measure volume by the root mean square (RMS) formula, while others use their own), but all readers should know there is far more to sound out and than just volume.

## OK, listen up...

### Koto 325 Series

These sleek speakers, available in your choice of black or white, are 9 watts apiece for a total of 18 watts, with a 2 ohm (4 to 16) woofer and 8 ohm (4 to 16) tweeter built in. The speakers are easy to set up (just plug in), so they look like an ideal set of your monitor. Setup is a snap and the controls for the power on/off, bass, and 3D surround sound are on the lower right speaker. A handy on/off "mute" button and headphones jack are also accessible. There is no subwoofer included, but there is an external jack for one at the back.

These speakers are ideal for classical music and some Web browsing, but the lack of bottom end was quite apparent in rock music, plus most game sound effects lacked that lower punch.

On the flip side, the 3D speakerized sound worked extremely well and it really did sound like the music and sound effects were coming from the air instead of the speakers themselves. If you are frequent computer user looking for a nice sounding, relatively inexpensive set of multimedia speakers, this includes the Koto 325 Series, since there is a full on-amp system and will only run you roughly \$200.

### Altec Lansing ACS55

At roughly \$100, this speakerized looking set of speakers with subwoofer is a cut price "on the edge of the seat" choice. If you can manage to get the in-body setup, you'll find the sub



woofer delivers a loud, low-mid tone, though, while the two satellites carry a wide spread—two plus one (4 to 16) tweeters and one 12 to 16 (4 to 16) bass driver. Four sets include Dolby Pro Logic Surround sound, 3D surround sound, and two subwoofers. In some cases, the sub and the other in the right speaker along with the other controls. Using the 325 Series setup, the level of surround sound, and volume.

Despite its impressive price and modern architecture, I found the ACS55 to be quite weak in its highest delivery (over) with compressing between the two speakers.

subwoofer controls) the second itself was not "loud" enough for my taste, and I hit much of the music sounded flat.

Game play with the Quake and on park was conflicting enough, with the gun firing and hand-held sounds, depending from under my chair, while the subwoofer roared. The Dolby Surround sound was remarkable (just boosted the mid-range controlling). Perhaps Altec Lansing should concentrate on a larger format, close to double the highs in classical music and speech from its subwoofer (the main sound is damaged).

As an initial bonus, a CD ROM with WaveEdit—special effects, utilities, and other programs to use in conjunction with your sound card and new speakers—is included.

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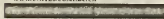
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BY PIPPA B. WYSONG

**GeoRiddler Canada:**  
From IQ Media and Canadian Geographic,  
\$69.95 to \$119.95

With its all-Canadian content, GeoRiddler Canada, an interactive trivia game for up to three players, will help anyone who is feeling out of sync get back in sync.

Not only are all the questions purely Canadian (such as "Which Vancouver team won back-to-back Stanley Cups?") or "A, the fastest through this city is also slowest," but the entire game, which has been given a "Canada" award by the Canadian Game Award of Excellence, is Canadian-born and bred.

The main portion of the game is conducted by a mainframe terminal that displays the questions on a screen (like the Geo-Cartel that we've seen) but the game is played by the players themselves. The game is played by the players themselves. The game is played by the players themselves.

To get the most fun out of the game, the user is advised to purchase "GeoRiddler" special buttons. In other words, if you don't have a special button, you can't play the game. The game is played by the players themselves.

When I tried the game as a solo player, it wasn't half bad. The game doesn't have an option to let the computer play against you. It's like playing Jeopardy! against the computer.

But, it's fun and it's surprising what you can find. Being all-Canadian makes it a lot more fun.

### Fit It/Buy It

Continued from page 32

of the monitor. I know it's a bit more, but it's a bit more. I know it's a bit more, but it's a bit more. I know it's a bit more, but it's a bit more.

Close your mouse pad and your mouse is locked. Periodically turn the computer off, and then open up the mouse. Use a little rubbing alcohol on a Q-Tip, making sure that no cotton strands are left behind.

Then push out of case? Don't know when the cartridge is empty, then usually enough time left for about 10-15 minutes. Remove the cartridge, hold it away from you and gently rock it back and forth to release the remaining tape. Don't touch it. Replace the cartridge and try again.

Remember when writing old words, save you the trouble of a different file name and then rename your computer to give it another chance. You don't have to understand why it works, just stay calm and let the glitch fix itself.

# REAL TIME

## games on the web

by  
**Marc Saltzman**

**M**ost of you know the feeling of slaving blindly at the monitor at home or in the office, and just not being in the mood to do any more. So you launch Windows and off you go. Well, if you're craving a fresh diversion to get you through to your next coffee break, the World Wide Web is your answer. There are literally thousands of fun little games to play. Locked into the small dark corners of cyberspace that require no downloading



still at <http://www.station.com>. You may also win some neat prizes for your efforts.

### I, Too, Was in the Arcade

This used to be my favorite pastime, but I've brought me back in my younger days hanging around Tinseltown Arcade at Village and Dundas streets in Toronto. Toronto's own Virtual Arcade is brought to you by Microsoft Multimedia, and has been recently expanded to include a second floor with even more playing

"rooms." Each section is game-specific: *lockersports*, *chess*, the *air plane* room, and so forth, and you must register to be able to play. Shockwave and Java versions of classic like *Puissance*, *Big Bug*, *Asteroids*, *Space Invaders*, or

*Galaxian*—or draw a virtual quarter into original titles such as *Mr. Blob* or *Unlatched*. If you are seeking Microsoft it is your browser and MCI's movie will also keep you burning that room to room. If a deal exists on your PC is what you're after, look for the Virtual Arcade at <http://www.virtualarcade.com>. See this.

### State of Shock

ShockWave is Macromedia's official page showcasing some impressive Shockwave games on the net. What you'll be faced to fun games such as *Cosmos*, *Stargate* (which is David Lerman or 800 called), *Take Punter* (a humorous spin off from the *Wag* game being online), *Stop a Sinner*, *Get Me*, *Missile*, *Can't Stop*, *Can't Stop*, *Five Degrees* of Separation (featuring *Worm* and *MSN*), *Shocking* (featuring *Worm* and *MSN*), and *Shocking* (featuring *Worm* and *MSN*).

Check it if you want, the Site of the Day.

the *Galaxy*, *Asteroids*, *Space Invaders*, or *Mr. Blob*, and you'll be sure to enjoy at least one or two games from the long list of choices. After you've finished the ones you like the best, check the games will be in a separate server altogether. Get shocked at <http://www.station.com>.

### Java Fun

Java is also a very effective language to create small interactive games with, and there are many applications on the web for your amusement. Java technology should already be present in your browser, so don't worry about any special plug-ins.

The *Gamester* Java Archive contains over 1000 games and links to games that have been developed with Java, such as *Good*, *Bad*, *Game*, *Game*, *Game*, or *Game*. There are also many other Java games. Gamester has categorized all the game games for you, so click away to your heart's content.

Check the main site worthy of a book mark and countless awards. <http://www.gamester.com/jsp/gamester.html>



There are 3 Dots in this game.

and very little more.

All you need to participate is the Internet. It is a Web browser or higher, modern, Netscape Communicator/Navigator, or Microsoft Internet Explorer (version 3 or later), and a recommended, and the first Shockwave plug-in available at <http://www.macromedia.com>.

The following sites are great for all ages, and are perfect for those who aren't yet into the world of games on a computer's hard drive like my last "must" job—goodly.

### Sony Satisfaction

Sony has created a stellar site, dubbed the S-Site, for parents looking to capture TV game-time excitement right on their PC. Play online versions of *Wheel of Fortune* and *Jeopardy!* which look and sound almost identical to the game show versions. If you see one of these cash prizes, you'll want to show them and find yourself (assuming the answer before the computer do, then tell your friend.



### In the Zone

The *In the Zone* is a wonderful collection of a more or less animated games and *Twisted* games, such as *Real*, *Game*, *Game*, or *Game*. There are also many other Java games. Gamester has categorized all the game games for you, so click away to your heart's content.

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by IT is game home. Simply use your mouse to match objects together such as the animals, the birds, and the fish, and the second player, and, once completed, you will be in for a treat.

By out some of these valuable time-wasters at <http://www.station.com>.

Well, don't forget to keep an eye out when you're watching a movie (and on TV) to get some of the best site down here at the end of the commercial (they all have them now). You'll never be able to find a real time game or two at the site listed to the first. Good!







Mac  
Rant

David Green

**I**f a cliffhanger about the Apple divorce and co-founder Steve Jobs and Microsoft Corp. chairman and chief executive officer Bill Gates have announced a formal product and technology development agreement between the two companies in effect, the agreement is a technology sales of sorts. The Mac, previously only partially integrated into two camps, the deal was either a complete sell-off of Apple's values or the most serious business deal of the decade.

To many is the fact concerning the agreement represents a logical resolution in the recent problems of both Apple and its customers. To others, however, the agreement represents the logical possible resolution of many years of struggle and sacrifice.

To reverse Apple and Microsoft have been self-driven interests for over a decade, with Apple having Microsoft of copying its software in much Apple's "steal and lose" it. Microsoft has clearly made market gains in almost every Apple stronghold, including Apple's management in a bunch of purchased software licenses, even when going out last off.

The real bottom is in the fight, however, have

been Apple's legal customers, who lived a daily stress. Right through Apple and possibly lose in the face of Microsoft's "steal and lose" or "steal and lose" to Microsoft. And now they are abandoning the only computer that can work the way they did.

Well, it appears the fight is over. And the many alleged "steal and lose" parties can claim a victory... of sorts.

#### What does Apple get?

Apple gets to start its fight with Microsoft's licensing, a right to use for Apple's continued existence. Considering Microsoft's customers over the past decade, the Microsoft, which Apple software giant is the only game in town. Copied with its 1980s deal, marketing, pricing, and aggressive business practices, Microsoft is the product of a profit that can be put almost anything it wants.

Apple also gains Windows edition from Microsoft's purchase of Apple's non-voting shares. Apple and Microsoft both have made their amount of cash in the bank, but if Apple or Apple loses, you'll remember that it's probably better to have \$100 in Apple's hands than to have \$100 in Microsoft's.

Finally, Microsoft has agreed to put its Office software into use in the Mac platform, giving Apple responsibility in the corporate world, where the lack of a particular cross-platform software applications can affect the Mac's fate.

## Is the Holy War Over?

#### What does Microsoft get?

The agreement gives the way for a broad-based new licensing arrangement to which Apple can join and work more closely on its products. This means Apple, Intel and the rest will stop its legal battles with Microsoft. It also means Apple will share many of its technological secrets with Microsoft. Of course, Microsoft might suggest Apple had already been sharing these with Microsoft the year-and-a-half payment.

Further, by making this deal, Microsoft allows the world that Apple will survive, at least for three or four more years. Apple's ongoing existence in Microsoft forces the issue. First, Microsoft makes more money with every Mac sold than Apple. Due to the inherent differences between hardware margins and software margins, however, Microsoft gets to say "welcome" to a major "off" in the U.S. Federal Trade Commission. This is very important for Microsoft, as the company has spent millions of dollars defending its aggressive business practices.

#### Customers gain as well

But the real winners in this deal are Apple's legal customers. The deal signals the Apple will be around for years to come. Large computer customers, as well as large organizations who buy thousands of units at a time, know that Apple is logical in such alternative. Priorities of better integration between the Windows side of life and the Mac side will probably improve sales for Apple. After all, it's nice to be able to share

files with your workmates without having to convert document formats.

Of course, not everybody wins in this arrangement. Microsoft, which until now enjoyed a special relationship with Apple, may not be as happy. Apple, which until now enjoyed a special relationship with Apple, may not be as happy. Apple, which until now enjoyed a special relationship with Apple, may not be as happy.

Believable: Sun Microsystems also lost Apple as an important ally in its fight with Microsoft to control the destiny of its Java Web language. Under the agreement Apple has turned its back with Microsoft on future plans for Java plans that might exclude Sun and bring it to a secondary role.

#### But wait, there's more

Just when you thought it couldn't get any hotter than this Apple deal announced to the world, computer get. The Power Macintosh platform is a 128 MB version that's new in terms of its Apple's highest performance version of one year ago. The new power comes equipped with a 60 MB RAM, a 4 GB hard drive, a 4x CD-ROM drive, and lots of other goodies, and can be purchased for \$1,999. Apple also introduced a powerful new lower power version on Apple's PowerPC 3 The Low-Power 3 just gives you full speed photo making power on Apple's new power class and costs around \$1,999.

Get the whole story? Send your comments, tips and comments to [macrant@compuserve.com](mailto:macrant@compuserve.com). Please note that due to the volume of mail, individual questions cannot be answered. ■

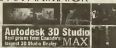
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### Awkward introductions, fast friends

There were some awkward moments for me while creating the Alpha. My computer has a notorious dislike for Plug and Play, and it took a while before all the config-ware friends out there knew some advice might be got used to using a pen to point and click, but the rewards are worth the effort. The pain is more ergonomically suited

to the way an artist works, and its point and tap buttons can be customized to your

One final lesson is that the pen allows you to easily sign your name in your artwork and documents—a nearly impossible task with an ordinary mouse. ♦

#### Sign Is Right

For more information, visit the Website at <http://www.alpha.com>

Wendy Jordan is a freelance writer and illustrator. She can be reached at via email at [wendy@alpha.com](mailto:wendy@alpha.com) and you can view some of her Alpha 8 effects online at <http://alpha.com>



## Throw away your Paint-brushes!

BY BRANDI JASMINE

The Wacom Alpha 8 is a small digital pad that I sometimes describe to colleagues as a "confined pen-mount." The 8.5x5.5-inch square, about the size of a small mousepad, is the canvas on which I now paint. I have known many fine illustrators, sketchers of people, and creators of panels, to not consider my creative efforts entirely within the digital platform, as a result of finding this tool.

It's incredible to think that the technology for the Alpha 8 has been available for more than 10 years. It has only been recently that it has become affordable for the average user. Available at local computer suppliers for around \$250, the Alpha 8 comes packaged with Photo! Design Desktop 4.0, a simple but functional paint program with a few exceptions of note. Its interface is an entire desk, complete with rulers for each tool—the stroke of 100 years, scratches of pencils, and ghosts of old letters.

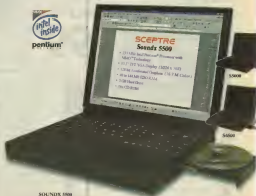
Alpha 8 truly shines in the light of Alpha's pen-sensitivity. Photo! Design Alpha 8 is pen-sensitive, meaning that the harder you press, the deeper the line. This permits the artist to really draw on the computer, to create the same effect as if he or she had drawn on paper with pen, ink, pencil, or charcoal.

The reality can be astoundingly realistic. The images for this article were produced entirely within Photo! Design, using the Alpha 8, with no preparation or scanning. Although you can certainly make use of a scanner and a printer to expand its use, Alpha 8's pen-sensitive tools operate on a huge variety of software packages, including those from Adobe, friend, Microsoft, Macintosh, and Corel.

The Wacom Graphics Tablet works with all Macintosh applications that support a mouse, but only those programs that give their sensitive tools will respond to the pen's (non-sensitive) aspects of the Tablet.

This opens up a whole new range of possibilities to the digital artist—and at a price that is far lower than one might expect annually on pen and brushes. A few sets of pens for Photo! Design, including a 30-chalk effect, should be available to Macintosh users in early August.

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# Educator's Enthusiasm For Technology Leaves Rich Legacy For B.C. Schools

When they go back to school this month, thousands of Vancouver public school computerizing students and teachers will be missing a friend and educator: Barry Macdonald, teacher, administrator, and promoter of the use of computers in the classroom died in the spring, of cancer, at the age of 53.

As a young teacher at Earl Vancouver

South Hill Elementary in the early 80s, Barry gained access for his students to the first home computer at John Oliver Secondary down the street, via a daylong fix. A few years later, using the personal for the classroom of the "first" personal computers, Barry started working with a Commodore Pet, one of the first generations of PCs.

With basic primitive equipment, and with

support from the school district, he soon first got a Commodore 6400, which remained in operation until 1985, serving generations of students and teachers with educational software, online games and trivia contests, Internet links, and a safe environment for students to chat.

Moving into electronic administration, Barry helped to build up the Vancouver School

Board's Media Services department, which among other services, provided a library of software that teachers could borrow for classroom use. He also helped create a district technology center to provide training for teachers in the educational use of computers.

While providing leadership and direction in schools looking to reap the benefits of the use of computers in the classroom, Barry never lost sight of the fact that computers were not an end in themselves—they were a tool to support student learning. The key question for Barry was always: "What will students learn from this activity?"

During the 1990s, while his job responsibilities increased as he was appointed director of computing, changing a department that was expected to include library resources and curriculum development, Barry continued to look for ways to connect technology with education. For a year, he led a group of local teachers, convinced by the provincial ministry of education in developing ideas for integrating information technology into the school curriculum at all grade levels, helping to create the framework that, this year, has become Information Technology, a new required course for students in kindergarten through to 12.

To help, he pushed and pushed the Vancouver school district to connect schools electronically to one another and to the Internet. Starting in 1996, every school was set up to have Internet access.

Barry's legacy will be broad, and because of this effort, Vancouver's commitment to build a solid infrastructure, providing high speed Internet access to all students, even in these times of funding cuts.

The reality did take time, however. As part of Vancouver's Budget 1999, Barry, along with all the other district staff, was laid off in the spring. At the same time, his Media Services and Technology department was pared back, leaving much to do, and dispersing much of its collection of software, files, and other media to individual schools.

And in May, Barry, who had been battling cancer for several years, died.

He will be remembered for a sense of humor, and for a strong belief that good technology tools and training, teachers and students can become more creative problem solvers, that it's not enough to show how things are done, that while that needs to be done, it needs to be done with thought, with respect, and with a plan for its use. This man always done while keeping in mind the question: "What will students learn from this?"

In the coming school year, as parents, teachers, and students work together to get computers and the Internet into Vancouver classrooms, as they experiment with ways to meet the requirements of the new Information Technology curriculum, as they learn to use this new technology to prepare students to be active learners and citizens of the next millennium, they will be building upon the ideas and leadership of Barry Macdonald. His encouragement of the use of technology in the classroom has made Vancouver schools a better learning environment, but the loss of the man has made us all the poorer. ■

Contact Don Denney, his email at don.denney@telusnet.bc.ca

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Each of the programs reviewed here does much the same thing: keeps track of your transactions and converts the numbers into useful information. But the lowest version of these popular packages mean doing both things and were complex financial manuals from a house.

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Web site: <http://www.chemed.kent.edu/chemed95/>

Intel's Quixote has been a best-seller for some years, because it's both easy to use and comprehensive. There are two versions of Quixote for PC and Macintosh systems (Models 4 and 5 respectively), with each version available in Novell and Gelato editions.



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Book available: \$12. Field use.

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Setting several organizational impacts the new version of Microsoft Money, as does a newly designed Contacts page. From Contacts, the user can jump to much the same utilities as users of Quicken, as well as to the program's Planning Wizard, which are adapted from the Windows 3.1 version of Money. Standard Windows 9x conventions, such as tabs, allow a choice of lists, deposit, transfer, withdrawal, and so on.

Boeing's reporting capabilities are a little less useful than those in Quicken, if only because only one graph at a time can be shown. But it's still the best of the two.



Like Quicken, Money allows access to online banking, although, again, the offerings are American.

From MCA Software. For Windows 3.11, Mac. Price: \$29.95. Windows 3.1, \$19.95. Windows 3.1 or Mac (not available through retail U.S. shipping & handling fee applied).

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# Infant Technology Grows Up in **Vancouver** City Home to Leaders in **Netcasting** by June Campbell

**N**etcasting is defined as the real-time transmission (live broadcasting) of audio and video over the Internet. It is a subset of Webcasting, a multimedia medium that includes chat and video-on-demand (the video streams, but is not broadcast live).

The Webcaster uses video cameras (digital or analog) to capture and download video signal to a computer. Special commercial or proprietary software is then used to stream the video (i.e., Netcast) over the Internet lines and cameras.

It can be accessed by the Net surfer using a special viewer, which can usually be downloaded for free. For stream, medium speeds of at least 35.4Kbps are recom-

mended—with a 14.4Kbps modem, video would likely appear as a still-show.

Commercial Webcasting products include applications such as VQcast, RealLive, VIO, VVO Active and Net TOOB.

"Webcasting is an Internet technology that is still in its infancy, but over the next two years, the whole idea will become commonplace—with huge implications for the broadcasting industry," according to William Marshall, the chief technology officer and founder of ITVNET, the world's first and largest content-driven Webcasting company.

## Covering it All

ITVNET has broad coverage of the

Cannes Film Festival, the Tony Awards, the Irish election, sporting events, concerts, London theatrical productions, and much, much more.

Since ITVNET first covered the Grammy Awards in 1995 (the first Vancouver company has become the world's largest Webcaster). Although there are presently about 100 commercial companies in the market offering Webcasting, and upward of 100 Web sites that are video enabled, ITVNET has no real competition.

Success in Webcasting requires a robust system capable of handling thousands of hits without faltering. The company has overcome the tremendous financial and technological challenges associated with

Webcasting by establishing strategic alliances and sponsorships from big industry names, such as Microsoft, Apple, Digital Equipment, and Intel.

## Money Matters

To put the dollar side in perspective, to Netcast 10,000 people simultaneously would cost approximately \$100,000 for start-up equipment (placed separately), \$10,000 per month in Internet service provider (ISP) charges, wages for two or three technicians and operators, and the usual operating expenses associated with running a small business.

ITVNET's network architect, Ross Grant,

Continued on page 47



BY LEO LUSTER



## Hackers Fail Another Challenge

**H**ackers enjoyed the world's best and tried to break into a Canadian company's World Wide Web site they came from six countries and together made 172,436 attempts to change its phrase and attach a credit card number. But all failed and the \$10,000 prize for a successful attempt went undivided.

Attempts to crack the Web site were made from Australia, Brazil, Canada, Germany, Indonesia, Kazakhstan, Romania, Singapore, South Africa, Switzerland, Taiwan, United Arab Emirates, the United States, and Zimbabwe.

Installed within a locked computer were an Apple Computer, Intel, Microsoft, Oracle, PGP Inc., and the U.S. Army, Navy, and Federal government.

Gilbert Tsai, operations manager for Vancouver-based Virtech Communications Inc., says the contest to break into the company's Macintosh-based Web server proved four teams electronic commerce and credit transactions can be. He says it also showed how the right design of the Web scripting system protects it from unauthorized visitors. The more open design of MHTML and HTML machines, he claims, makes it easier for hackers to break in.

Prize money has also gone unclaimed in two similar contests: one in Sweden earlier this year, and the other in the United States two years ago.

Apple Computer is now offering a \$20,000 prize to anyone who can break into a Workgroup Server page in Germany. The Soviets have mounted a second contest, again with a \$100,000 \$20,000 prize. But this time to test Mac OS 8.5, the latest version of the Macintosh operating system.

Virtech would not have been damaged if there had been a successful hack. The can diders of the contest told down that, in

involve the prize, the hacker must reveal what was done to gain the unauthorized entry which, says Tsai, would then have been used to make the Mac more secure. Although he admits the company would have faced a problem should it reveal how it was done or other sensitive details could take similar precautions. Or would distribution of the knowledge be used by more hackers to break into other sites that had not taken proper precautions?

### Mac to front?

Virtech operations director Bruce Swale believes the contests have shown the Mac OS to be incredible. Security-minded corporations, he suggests, should consider installing Mac Servers as the front ends to the Internet to protect their UNIX and Windows NT networks. This would save considerable amounts by not having to install and maintain expensive firewalls.

Swale is insured that anyone attempting to break in were made with Get Admin, a popular freeware program used by crackers to enter NT systems.

"One young man, he says, mailed information when he showed to complain that his credit card had been wrongly debited. If only he could have Virtech's merchant's account number, he would contact the bank to cut out the problem. "But we don't have a merchant's account," Swale says with a smile.

Virtech used an ordinary Macintosh with 40 MB RAM and a 3.5 GB hard drive running on Mac OS 7.5.3 and Windows 3.1.1 server software. No firewalls were needed.

Virtech specializes in Web site and CD-ROM production, and animation. Last December, it launched HyperMarket, one of Canada's first online shopping malls, where visitors can visit well-known stores including Future Shop and Club Monaco. ■

### Cruising for Wheels

Continued from page 47

fun and informative features, such as Google's "Web" shows drive and controls, a discussion table, reader comments, free classifieds, auctions, CarTalk you, and lots more. In short, CarTalk is a premium Web site for dedicated automotive fans. Make sure you have the firstPage plug-in installed. Google it at <http://www.car-talk.com>.

Then check out your own favorite across the vast digital landscape, whether you're out to buy or sell a vehicle, or just surfing for a webmaster who appreciates via Newsletter to let the subscribers know if you enjoyed their free services or if you have any comments to better the publication. **Send** ■

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The following are some more auto-related sites worthy of a stop:  
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# UBC Launches Internet Marketing Program

BY JUNE CAMPBELL

Marketing professionals wanting to add Internet expertise to their existing skills will be interested in UBC's new Certificate in Internet Marketing, which runs from October to March.

The Continuing Studies program, believed to be the first of its kind anywhere, is tailored to participants who have a solid understanding of traditional marketing principles and want to apply these in the online world. Tailored to accommodate their schedules, approximately half of this part-time course includes discussion sessions on weekdays with the remainder delivered via the Web.

According to practicum consultant, Eric Clayton, the idea for the program originated with William King, manager of the department's Internet program, who presented a need in the business community. King assembled an 18-member advisory committee representing business and academic interests with experience in both traditional and online marketing and data technology. The committee recommended a curriculum that includes three broad subject areas: Internet Technologies, Online Behaviour and Online Business Government, as well as two development-related components, Product and Service Development and Integrated Marketing Plan Development.

Online Technologies covers telecommunication and client server computing, Internet hardware, software, and electronic commerce. Online Behaviour addresses consumer behaviour from psychological and sociological perspectives, while the Business Environment looks at Internet business models, legal and regulatory, government regulations, and legal and ethical issues of the Internet.

Product and Service Development has participants apply their understanding in the development of online products and services such as corporate strategic vision and mission, market research, conceptual development of digitally oriented goods and services, and product testing. The Integrated Marketing Plan component brings together the participants' knowledge and understanding of the Internet and electronic commerce within the framework of marketing and product plans.

In addition to being the key program lead, Nancy Imboden, Tom Benish, the program's Executive Technology Inc. and a UBC Internet Programs instructor, and Clay Rivest, the regional director of CIMA and president of Triumph Communications.

"Students from Vancouver's business community is very strong. After announcing the program just two weeks ago, we have already received 15 applications. So we're very pleased with such an excellent and immediate response, especially given that the program is limited to 30 participants," Clayton says.

"We anticipate full enrolment for the fall program. One interested participant is a


three-year Ryerson University student from Toronto, who currently enrolling in marketing, but wants to take a year off and come to Vancouver just to take this program. He said it's exactly the type of interdisciplinary

program he's looking for—one that does both marketing and technology—and something that traditional marketing curricula don't really teach."

Subsidy for the program is \$4,300.

Contact:  
UBC Internet Programs  
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Web site: <http://www.studies.ubc.ca/Internet>  
Eric Clayton, email: clay@stud.ubc.ca

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# Barrs Focuses on Entertainment—for Fun and Profit

BY JUNE CAMPBELL

If you're looking for a real cash cow, there's no larger industry in North America than the one in front of you. That's why you have never considered a career path in Vancouver lawyer S. Tyler Barr. The lawyer, delivered in down-to-earth language with practical examples, comes across as intelligent, witty, and fun.

Of course, Tyler Barr is not your typical lawyer, and the contacts being discussed pertain to the entertainment industry.

After establishing his practice, Barr & Associates, in 1993, Tyler is one of the few Vancouver lawyers to focus on intellectual property, entertainment, and new media law. He also represents the film, music, design, television, fashion, multimedia and Internet industries as well as software development companies.

Not surprisingly, Barr's legal focus, combined with his high demand as a consultant, has led to a lot of demand as a consultant, lecturer, speaker and writer. He currently has teaching commitments at the Vancouver Film School's Multimedia Production program, BCIT's Multimedia Program and UBC's Multimedia Certificate course. Speaking engagements have included the Vancouver Film Festival, the Vancouver Film Media Alliance, various national associations and seminars, with writing published in the *ABC*

*Manual* magazine, *Tangerine*, and the *Pacific Sun* newspaper's Association publication, *Week, Week & Singer*.

Originally from Ontario and Quebec, Barr completed his final two years of high school in Italy, as a scholarship. After graduation, he studied political science at McMaster University, then studied law at McGill. After obtaining his law degree in 1993, Tyler set off, passed the bar exam and began his law career.

**June Campbell: Why did you go into law?**  
**Tyler Barr:** I'm a good lawyer. I want to do it. I played my mind OK, and because law gives you a great, solid background, it gives you a great, solid background. It gives you a great, solid background and property protection. I don't know if I can help you. I don't know if I can help you. I don't know if I can help you.

**JC: Why does an entertainment lawyer like you?**  
**Tyler Barr:** I'm an entertainment lawyer. I love the whole area of entertainment. The way we do business is different. The way we do business is different. The way we do business is different.

**JC: How is entertainment law different from corporate law?**  
**Tyler Barr:** I'm an entertainment lawyer. I love the whole area of entertainment. The way we do business is different. The way we do business is different. The way we do business is different.

**JC: How is entertainment law different from corporate law?**  
**Tyler Barr:** I'm an entertainment lawyer. I love the whole area of entertainment. The way we do business is different. The way we do business is different. The way we do business is different.

copyright, trademark, intellectual property, confidential information and trade secrets, and copyright. I have to have a good understanding of all that, plus being familiar with the industry and with intellectual property. I also have to know intellectual law, like what's going on with other countries. I'm a member of an international association of entertainment and new media lawyers. We refer back and forth and benefit with one another as well as national laws.

**JC: What copyright law different from U.S. copyright?**

**Tyler Barr:** I'm an entertainment lawyer. I love the whole area of entertainment. The way we do business is different. The way we do business is different. The way we do business is different.

**JC: What's the main message you'd like to give to readers?**

**Tyler Barr:** I'm an entertainment lawyer. I love the whole area of entertainment. The way we do business is different. The way we do business is different. The way we do business is different.

**JC: What's the main message you'd like to give to readers?**

**Tyler Barr:** I'm an entertainment lawyer. I love the whole area of entertainment. The way we do business is different. The way we do business is different. The way we do business is different.

people believe. Most issues that average are protected under existing intellectual property law. It's the media that's changed, not the laws. Legislation just need to expand the application a little but need to expand the application.

**JC: What issues are emerging?**

**Tyler Barr:** I'm an entertainment lawyer. I love the whole area of entertainment. The way we do business is different. The way we do business is different. The way we do business is different.

**JC: What about your personal life?**

**Tyler Barr:** I'm an entertainment lawyer. I love the whole area of entertainment. The way we do business is different. The way we do business is different. The way we do business is different.

**JC: How can people contact you?**

**Tyler Barr:** I'm an entertainment lawyer. I love the whole area of entertainment. The way we do business is different. The way we do business is different. The way we do business is different.

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# Cosmo Helps You Change Your Look — Virtually

BY JUNE CAMPBELL

Thanks to a CD-ROM being developed by Motion Works of Vancouver for SegaSoft and Future Magazine, women will soon be able to have a Cosmo-style makeover via their PC before trying out the look in real life. With the click of a mouse, consumers will be able to view themselves in a variety of new looks, using their own digitized photo or an image from the "Library of Faces."

Consumers can get their photo digitized by their local film developer (in for a free Kodak image Mega Picture Disk will be included with the CD-ROM), or by using a scanner or digital camera.

We need to wonder what you'll look like in Cover Girl's featured Advanced Colour Self-Retaining Lipstick, try it and other items listed cosmetics on "Virtuality." Users check out a new hairstyle or hair colour before you make the transition for real. The Virtual Makeup program is "ultimate fun, expense, inconvenience, performance, and paratotal entertainment of getting a 'real' makeover."

## Feeling hoarse, hoarse, hoarse

Since fashion trends change almost as rapidly as computer technology, software makers will be able to download the latest hairstyles, makeup, beauty tips, and product reviews every time updates from an accompanying Web site.

The concept for Virtual Makeup was developed at Motion Works by Ruth Baker, Hana Osherson, and Jeff Meade, who presented a proposal and demo to SegaSoft and Future Magazine.

The CD-ROM, scheduled for a fall release, is the result of more than a year's labor by six high-profile women. Developed with Motion Works' high-end computer graphics engine and Adobe Photoshop, the CD-ROM will be available for Mac, Windows 95, and Windows 3.1 operating systems.

According to Osherson, the development of Cosmo-style Virtual Makeup presented some special challenges. First, Cosmo-style is a print publication, consistent with digital media. Secondly, Motion Works personnel are accustomed to developing entertainment titles—singing is the whole theme—modest was a learning experience. Since little or no market research was available in particular interest in this type of product, they relied on focus groups.

"We wanted to design a product with an intuitive interface that would respond to adult women without being overbearing," says Osherson.

Motion Works is a Vancouver-based public company, which is 50 percent owned by Toronto's SegaSoft. SegaSoft develops interactive software for PCs and the Internet and is located in Richmond City, Calif. Future Magazine publishes Cosmo-style. ♦



## See seeing:

Virtual Makeup,  
<http://www.virtualmakeup.com>

The Motion Works Group,  
<http://www.mwgroup.com>

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## Some Good Books

### OS/2 Users Are Certifiable

#### OS/2 Certification Handbook

By Bruce Kitting and Kathy Kern,  
from Horst Rieder Publishing \$11.95

To prove to the computer world that you are an OS/2 expert (and often an OS/2 Certification course), the *OS/2 Certification Handbook* is designed to ensure that you have more than just the basics of the OS/2 operating system.

The *OS/2 Certification Handbook* is a self-paced manual that covers the basic knowledge and skills needed to become a Certified OS/2 Engineer. It was designed to build on a user's OS/2 knowledge and prepare him or her for the OS/2 exam. Note that the book is not for the faint of heart. It's 1,027 pages are meant for advanced users and beginning system administrators.

Topics include versions of OS/2 (2.1 and 3.0 in this book), installation, installing and migrating applications using OS/2, the Workplace Shell, supporting OS/2 and OS/2 Performance and Tuning. The appendices include setting the keyboard, help file modules and the installation, BIOS, and finally installing OS/2 using CD-ROM. There is also a large section on Command Reference in the back of the book.

The book comes with a CD-ROM which

has demonstration copies of Warp 3.0 and LAN Server 4.0 and includes not only with certification procedures and specifications, but also product and program names.

Overall, I found the book very useful and useful as being a book to power OS/2 users everywhere. Each chapter ends with a chapter summary, some review questions, and answers to those questions. Unfortunately, the book has some glaring omissions such as networking, the Java Pak (the Warp 3.0) and TRAP services, and I feel the price tag is significantly higher than it should be. While Warp 4.0 and Warp Server are available, though, I look forward to an updated version of this book as I find it an excellent reference. —Steve Laybold

### A Techie Tome For Win95 Converts

#### Microsoft Windows 95 Resource Kit

Microsoft Press, includes three 3.5-inch diskettes, ISBN 1-56619-719-2, \$67.95

Not only has Windows 95 been improving from Windows 3.0 to Windows 95, but so many computer users slowly discovered, this is not a change to roll back.

Conversion means less service, and this change should be single-minded with lots of planning. Microsoft anticipated this and pro-

vided the *Windows 95 Resource Kit* referred to as "The Technical Guide to Managing for Installation, Configuration, and Supporting Windows 95 in your Organization," in 1,344 pages are geared to network administrators, support professionals, system integrators, and computer professionals—definitely not for your average user.

Pages in Microsoft for its technical content, its information on networking, security, network administration, and performance tuning should not, however, be it means you have already been convinced to use Windows 95. Since it is a book, Microsoft Press, readers should not expect it to point out any of Windows 95's shortcomings.

The book is divided into eight sections: Deployment Planning Guide, Installation, Networking, System Management, System Configuration, Customization, Windows 95 Advanced, and the Appendix. Content relating to necessary before implementing Windows 95 in your office, but with the Resource Kit, the book would be for less than.

So nice, it's included twice

The included diskette features a Windows 95 version of the entire Resource Kit (with full environment capabilities), a pointer for administrators, and a Macintosh version help file (the ongoing down Mac is

Continued on page 46

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2. If your service is not included in our database, contact us at 604-438-2648 and we will send you a form.

The deadline for changes and completed forms is:

**5 pm, Fri. Oct. 3**

Note: This survey is a free market service. There is no charge for listing.

**Wendy Mesley**  
Continued from page 32

Aspirant is a Jewish woman from Dallas. She entered a contest and used it as much she wanted the recipe. She was told it would cost her "two-bits." "No problem," she said, "just add it to my bill." It turned out it was \$200. She wanted to get even with Mesley-Mark and went home and put the recipe on the web—giving it away for free. It was a myth. But [TSC] Anonymous and The Gator and Afl covered it because journalists are inspired by the Internet.

CP: Do you see the web?

MESLEY: Not very much. We have a couple of members at the CBC who can find us anything I want or need.

CP: But if you don't have such great help everywhere for you?

MESLEY: Yeah, absolutely. You can't be a journalist without some sort of way of getting information. But when we're in production, I spend time in my sleep on the road and I just don't have the time.

CP: What's your take on where technology is taking us as a society?

MESLEY: Last year on the show, we talked to this computer programmer in Toronto who said that more and more resources are going to put in existing computers that are obsolete, and so smart, but we won't need humans any more for jobs. But, obviously,

he said that computers won't increase our productivity, and we're going to be without jobs and without incomes.

CP: These cyberprophets, once derided as computer geeks, are now lauded as heretics. Look at Bill Gates.

MESLEY: We're been talking about doing a program on him, the most powerful person in Canada, and were trying to decide whether it's Bill Clinton or Bill Gates.

CP: What do you think of it?

MESLEY: I don't know (laughing). I don't think it's politicians.

CP: Is it a person or thing?

MESLEY: Like what?

CP: Like a computer.

MESLEY: Well, although I did a story on the show about word flesh, where scientists are trying to get human consciousness into a computer.

CP: So, the line between what is a machine and what is human are becoming somewhat blurred.

MESLEY: We've been wondering about the idea of having politicians and jobs embedded in us. But what about bits of us embedded in computers?

CP: How old are you?

MESLEY: Forty.

CP: What do you think society will look like in 40 years?

MESLEY: I think we're spinning, but I don't know whether we're spinning out of control.



It's an opinion and I would like to think everything goes in cycles. Our love affair or obsession with technology will come to a point where we say, "Enough" and put the brakes on.

## The end of greatness?

CP: Your interest in technology does it contradict the your fascination with politics—the machine behind the power and what governs influence?

MESLEY: Yeah, I'm fascinated with who holds power and what is influencing our lives. Our political issues are shifting outside traditional power into something more technology-oriented. Politicians don't make any major changes or decisions before not being on line. There's no such thing as a great fish or woman diving which best for us. Everything has entered the realm of information technology like politics, where people have these little machines and power buttons.

CP: So where do people put their dreams and desires?

MESLEY: In consciousness. (She laughs). It can't be as a person anymore. We have to believe in our own selves and take advantage of technology, it's about being active and taking part in society, about taking about other people and caring about the world. It sounds like supply—the ultimate, humans are good. ♦

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BY JUNE CAMPBELL

For three generations "Data green light" flooded the studio, and a Web site was projected on a large screen over a row of computers at the base of the room as a robotic voice counted down.

The event was the launch of BCTV's new Web site, designed by Vancouver's Blue Zone Entertainment. The online site streamlines and Blue Zone are joining forces to focus on the future of digital media—combining BCTV's broadcast expertise with Blue Zone's interactive experience. The agreement represents the culmination of negotiations that began in October.

According to Blue Zone president, Bruce Wexler, the BCTV site is just the beginning of the "convergence" story. He says that in the future, viewers should expect to see many of the following on the site:

- exclusive, online content;
- Internet access education via the television;
- areas of the Web site devoted to electronic commerce (i.e., viewers will be able to make reservations and transfer funds electronically via the travel section of the BCTV site);

- hosting of live events and special Internet programming;
- sites linked by "3D" who provide a guided video tour of a site or an area;
- and utilization of WebTV and/or other emerging technologies.

Wexler says Blue Zone has a policy to develop compelling, entertaining content, before deciding what technology should be used to deliver it. "The technology is in its infancy. It isn't so the early days of radio. Right now, we're streaming video from the Web site at four frames per second. But when technology like Rapid Move and BC Tel's ADSL becomes widely available, we'll be able to broadcast high-speed content over the Internet."

Blue Zone is best known for RADiD, an online video comedy show, and for their work with Electronic Arts and Roblox.

#### Site seeing:

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In This Issue: A July 1999 edition of  
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**Marketplace**



## Some Good Books, cont'd

### Books

Continued from page 54

Ward's support tools include an enhanced print implementation, system configuration backup tools, a registry backup tool, and a restoring viewer.

If you are a power Windows 95 user and were already only one book on Windows 95, this is the one you should get. System administrators should already own this book. If they are running Windows 95 on any of their workstations, it's as simple as that.—  
*Kevin Dayfield*

### Naked to the Online World

*Naked in Cyberspace: How to Find Personal Information Online*

By Carol A. Lane, from *Publisher's Press*, \$12.95

Who's watching you? Police officers, job-seekers, shop moths, journalists, businessmen, marketing managers? Any or all of these, and others, may be observing what you buy online, when you did it, and who you did it with.

The question is to which devices, satellites and home network systems has expanded thanks to computers, CD-ROMs, and the Internet. Big Brother has indeed grown bigger.

The people who pay into your private and public personal points count online and online data. They want both details, managing and adaptive controllers, with the best of money, of course. But what they cannot do is decide if you got a loan, whether you are the target of a burglar or a blackmailer, or whether things you wished to keep secret become public property.

The success of cyberspace studies resulted in a new book, *Naked in Cyberspace*, will come as a shock to many. But don't allow the online Carol A. Lane, an American psychologist who operates her own research firm. The information is there. She has no secrets over how it is used.

Understandably, Lane concentrates on American sources. But she also provides a wealth of information on how to obtain information in other countries including Canada.

She shows how businesses can gain competitive intelligence and even how to screen potential sales. Finding people via news databases, online magazines, mailing lists, and telephone and professional directories are just a few of the sources used by the electronic hunters.

#### Technical Complexity

The ease with which information can be obtained is scary. When Lane began her book, she planned only a small section on the Net. In just 1993 512 new pages were added. The reason? So much information is now accessible through the Internet that it can be virtually impossible to weed through it all to locate any specific fact. One needs a database of software to access the Internet [which is available free from many online vendors, or included in a variety of magazines on the Internet], after that, dozens or hundreds of minutes can be found online to help with navigating and searching the Net.

White and Yellow Pages, Yellow Pages search, reverse phone-number lists, political profiles—there are just a few of the tools available. And if those and many others aren't enough, you can always go to *Naked in Cyberspace's* own site, [www.naked.com](http://www.naked.com), [www.naked.com](http://www.naked.com).

The paperback does a fantastic job of online sources. It also offers free-to-use online sources of information, books such as *Who's Who* and other reference works, as well as the most modern CD-ROM databases.

When facts or readers of her book get lost in the vast, there is almost nowhere left to hide. We are truly *Naked in Cyberspace*.—  
*John L. Lister*

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# Change My Approach, Not My Tools

BY STEVE DOTTO



And it's monumentally difficult to get excited about every bit of the improvements we see in computer software and hardware. For example, I got a press release claiming this model or that model now runs at 333 MHz and I realize that the clunky old Power PC I am writing this on whereas by 2001 a mere 50 MHz should feel less than adequate. After all, many people are looking for me on the old superhighways, aren't they, with better and better machines than I have.

In point of fact, I don't feel bad at all. I have come to the realization that all the power and features in the world don't mean a thing unless there is a way for me to access and use that power. And in that way, computers are, in my opinion, as roughly the same shape they have been in for the past eight or so years.

Whether it's writing scripts or articles, or corresponding with business associates, I spend the majority of my time typing data into my computers. And I have a confession to make: The longer the keyboard, I don't switch type. I use approximately between five and six of the energy-intensive characters supposed to pass as my fingers and I hammer

away, trying to make as little time as possible to get ideas out of my head and onto the computer screen.

## The Human Precondition

For the majority of my work, I'm held back not by the power or features of a computer, but by my own limitations in inputting data. Until this bottleneck is eliminated, I would be getting any change in my work day.

All the advances in speed and in software features combined don't get my pulse racing anywhere near as fast as a discussion of how we can find a more efficient way we use a computer.

The first change should occur in the area of voice recognition. The only best for many a research project in fact, it represents the largest continuously funded research project in IBM's history. The folks at Big Blue have been working on voice recognition for some 25 years. People have taken their careers on and stood down from this project it's given us that long. Good thing, though, the fruits of their labor are about to be realized.

IBM and a few other select firms have been building it and trying to get it markets to realize that are accepted by the general public. The other big players in the game are Kurzweil and Dragon Systems.

Each of these companies is trying to provide what is called "continuous help" using speech. That is, a new language voice-driven system, in their words, voice-driven system, you need to be involved as much as many that the computer. You actually have to learn to speak in a way the computer can decipher into words.

## An-nun-ci-ate!

This is called direct speech. You need to think in French, conventional terms, and have a natural phrasing between your words. Sounds simple, but it's not a natural thing to do, and I find it exceedingly difficult.

Dragon and IBM are getting top reviews for their new continuous voice-recognition

expedition, Dragon NaturallySpeaking, and IBM's Virtual Assistant. Both products should fall in the \$500 price range for the professional editions.

NaturallySpeaking arrives in the morning, so all coffee in my hand. Boot up my computer, open the day's email, and respond to it. If I'm through it, I'm done. Now that's something to get excited about. I imagine there will be a learning curve, but to the

technology, but in the composition process. Executives have dictated letters and used dictaphones for years, however, I'm sure I can adjust.

Perfect Data Capture is a software program from Texas Instruments that can be used on the Knowledge Network to R-C and in many countries around the world. For more information on it or Steve Dotto, visit [MyThru.com](http://MyThru.com) or call 416-462-4444.

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# You asked us...



## Explosive issue

Q: Do you have any idea how to get the 4.0-bit version of WinScope for DOS? I've heard that at some local user groups in the United States, IBM might have given out copies of this software. Is the Toronto OS's user group an option?

A: To be sure, Brian,

Kevin Colford responded I spoke to someone at IBM and I was told that due to OS/2 support lines, encryption software is a custom-like program and is not supposed to leave the United States. WinScope has received permission to distribute its Windows program with this exception, but since IBM is in charge of WinScope Navigator for OS/2, they have been dropping their hands on this one. Expect I "have close access" to what I've been told.

## Reformatting your hard drive for FAT32

Q: My current priority concerns reformatting the CD-ROM version of Win95. Following your earlier advice, I checked to see what FAT system my CD-ROM had set up. Sure enough, it turned out to be FAT16. As I had also known my hard drive is a third edition I suspect then I thought it was.

Name I really do have to reformat and then again I was left with an old disk program for the first several months, and

my hard drive is a IDE, I thought I would take advantage of the similarities and upgrade to FAT32. Unfortunately, however, I ran into the information as to how to do this after that is run FAT32 at the DOS prompt. Well, after a couple of days just creating a boot disk that would recognize my CD-ROM, I thought I was ready. I believed that all I would have to do is run FDISK, say yes I wanted to format to FAT32, and that would be it. What I was not prepared for, however, were the obstacles that FDISK presented me with.

The first menu I encountered was "Create DOS Partition or Logical DOS Drive."

After Active Partition, I selected Partition or Logical DOS Drive.

After Partition Information, when I made the attempt to do that choice number 1 was the correct one. I was then told that it already existed, which makes perfect sense, but has left me confused.

At this point I backed out. With my limited understanding of computers, I am concerned that what about to do something that could only be modified by thousands of large amounts of cash on it. I am not what to do this myself, but the lack of information about this is staggering. I could find no step-by-step instructions after a fairly brief search of the Web.

Howard K. Pridemore

Alan Zeman responds: Wow! You're right FDISK is already partitioned, the user interface has remained the same since DOS 3.0 in 1989. And you did the right thing by stopping when you knew that you weren't sure, rather than going ahead and potentially wrecking everything.

The 3½ better alternative is Partition Magic, a nice Windows-like utility that can convert an existing FAT16 disk into a FAT32 one without destroying your data.

You say you want to start over again, however. This being the case:

Make sure you've backed up your personal data and anything else you need to keep.

Make sure you have your Windows 95 CD-ROM.

Make sure you have a boot diskette that works, and that has the DOS files on it that you'll need to be able to access your CD-ROM from a DOS prompt. That disk, make sure that you get boot to a DOS prompt, and then by typing D and then Shift you can see the files on a CD-ROM disk. Make sure that FDISK, FORMAT.COM, and SYS.COM are on the boot disk.

Now you're ready for the dangerous part: Boot to your floppy. You should get an A: prompt. Type FDISK.

The first screen will ask if you want to enable large disk support. Type Y for yes. This sets up support for FAT32.

At the time, your first choice is "1"

Before exiting Partition\* you can't create a new partition, since your disk is already full of existing partitions (that's why you got the error message you reported).

The next choice is "2" Create Primary DOS Partition. \* It will ask for your disk's label, and ask if you want to be interactive.

After creating your partition, you are back at the main menu. Now you can choose "2" Create DOS partition or logical drive. You want to create a Primary partition, set it active, and have it take up all your drive space. I think if you agree to all these options at once.

After that, it will require you to reboot. After rebooting, at the A: prompt, type "FORMAT C /F" (in quotes), which will format the hard drive (with FAT32) and will the DOS operating system files to your drive. That should give you five minutes. After that, type D, type B, to switch to your hard drive, and type "format" to run the Win95 setup.

\* Send Mac-related questions to MacTrends at MacTrends@compuserve.com. All questions become the property of MacTrends™ and David Foster.

\* Q&A answers should be directed to Brian Unfried via email at brianunfried@aol.com.

\* Send PC-related questions to Alan Zeman via email at Alan.Zeman\_A\_Zeman@compuserve.com.

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